talline compound of a somewhat deeper yellow colour, containing probably

$$C_{19}H_{13}N_3O_5 = \left.\begin{matrix} C_6H_4(NO_2) \\ C_6H_4(NO_2) \\ C_7H_5O \end{matrix}\right\} N.$$

This substance dissolves in alcoholic soda with a most magnificent crimson colour. Addition of water to the boiling liquid furnishes a yellow crystalline deposit, benzoate (?) of sodium remaining in solution.

The yellow powder is dinitro-diphenylamine. From boiling alcohol, it crystallizes in reddish needles, exhibiting a bluish metallic lustre. The analysis of the compound has led to the formula

$$C_{12}H_9N_3O_4 = \left.\begin{matrix} C_6H_4(NO_2) \\ C_6H_4(NO_2) \\ H \end{matrix}\right\} N.$$

The chemical history of these compounds will be the subject of a special communication.

XVI. "A Table of the Mean Declination of the Magnet in each Decade from January 1858 to December 1863, derived from the Observations made at the Magnetic Observatory at Lisbon; showing the Annual Variation, or Semiannual Inequality to which that element is subject." Drawn up by the Superintendent of the Lisbon Observatory, Senhor DA SILVEIRA, and communicated by Major-General SABINE, R.A., President of the Royal Society. Received June 6, 1864.

I have much pleasure in communicating to the Fellows of the Royal Society a copy of a Table which I have received from the Superintendent of the Magnetic Observatory at Lisbon, containing the mean values of the Declination in each Decade from the commencement of 1858 to the close of 1863, with corrections applied for the mean secular change, and showing, in a final column, the difference in each decade of the observed from the mean annual value derived from the 216 decades. This Table is a counterpart of Table VII. in Art. XII. of the Philosophical Transactions for 1863, p. 292, differing only in the substitution in the Lisbon Table of decades for weeks, and the addition of the year 1863.

This general confirmation by the Lisbon Observatory of the annual variation to which the Declination is subject, "the north end of the magnet pointing more towards the East when the sun is north of the Equator, and more towards the West when the sun is south of the Equator," is very satisfactory. In the Lisbon Table the disturbances have not been eliminated.

Means of the West Declination at the Lisbon Observatory, from January 1858 to December 1863.

Months.	Decade.	1858. 21°+	1859. 21°+	1860. 21°+	1861. 21°+	1862. 21°+	1863. 21°+	Means. 21°+	Corrected for Secular Change.	Means corrected. 21°+.	Differences from the means of the six years.
January ...	1.	42 08·0	37 12·5	30 37·2	26 42·0	20 28·8	13 27·0	28 25·9	−2 40·7	25 45·2	+0 37·4
	2.	41 31·5	36 38·7	30 54·6	26 52·8	20 18·6	13 55·8	28 22·0	−2 31·5	25 50·5	+0 42·7
	3.	41 08·3	37 12·4	30 15·6	29 41·4	19 17·4	13 48·0	28 33·8	−2 22·3	26 11·5	+1 03·7
February...	1.	41 14·6	36 4·5	30 10·8	26 53·4	19 18·0	14 9·6	27 58·5	−2 13·1	25 45·4	+0 37·6
	2.	40 17·5	35 38·7	31 8·4	26 19·2	18 22·8	12 32·4	27 23·2	−2 04·0	25 19·2	+0 11·4
	3.	38 11·0	35 40·3	31 34·8	26 40·8	18 27·0	12 10·8	27 7·4	−1 54·8	25 12·6	+0 04·8
March.....	1.	39 56·5	34 20·2	31 16·8	25 45·0	18 55·2	11 31·2	26 57·5	−1 45·6	25 11·9	+0 04·1
	2.	40 31·2	35 2·0	32 45·0	25 47·4	18 27·0	11 52·8	27 24·2	−1 36·4	25 47·8	+0 40·0
	3.	39 17·7	34 48·0	31 36·6	25 10·8	17 19·8	14 48·0	27 10·1	−1 27·3	25 42·8	+0 35·0
April	1.	39 37·2	34 9·0	30 52·2	23 48·6	17 25·2	12 55·8	26 28·0	−1 18·1	25 09·9	+0 02·1
	2.	39 18·7	34 50·4	30 20·4	24 2·4	18 9·6	11 36·6	26 23·0	−1 08·9	25 14·1	+0 06·3
	3.	37 11·5	34 57·0	28 54·0	23 25·8	16 37·2	10 45·6	25 18·5	−0 59·7	24 18·8	−0 49·0
May.....	1.	36 45·5	35 9·6	28 31·2	22 9·0	15 46·2	10 20·4	24 47·0	−0 50·5	23 56·5	−1 11·3
	2.	37 26·2	35 28·8	28 6·6	22 29·4	15 53·4	9 40·2	24 50·8	−0 41·4	24 09·4	−0 58·4
	3.	37 28·8	34 25·8	28 6·0	22 12·0	15 39·6	9 34·8	24 34·5	−0 32·2	24 02·3	−1 05·5

June	1.	36 56·0	32 26·4	28 11·4	21 36·6	15 31·2	9 17·4	23 59·8	−0 23·0	23 36·8	−1 31·0
	2.	36 28·5	32 25·8	27 57·0	21 28·2	15 30·6	9 10·8	23 50·1	−0 13·8	23 36·3	−1 31·5
	3.	37 21·1	33 57·6	28 13·8	20 41·4	15 12·6	9 37·2	24 10·6	−0 04·6	24 06·0	−1 01·8
July.....	1.	37 40·2	32 56·4	28 45·0	21 15·0	16 13·8	9 51·6	24 27·0	+0 04·6	24 31·6	−0 36·2
	2.	37 04·5	34 49·2	28 20·4	21 3·6	14 59·4	11 59·4	24 42·7	+0 13·8	24 56·5	−0 11·3
	3.	38 05·9	34 1·8	28 38·4	21 43·8	15 33·6	9 21·6	24 34·2	+0 23·0	24 57·2	−0 10·6
August ...	1.	37 18·0	33 25·2	29 50·4	21 40·2	16 9·0	9 50·4	24 42·2	+0 32·2	25 14·4	+0 06·6
	2.	38 03·0	32 57·6	29 12·0	22 30·0	15 34·8	10 51·6	24 51·5	+0 41·4	25 32·9	+0 25·1
	3.	37 53·2	32 1·8	27 51·0	21 19·2	15 4·2	10 24·6	24 5·7	+0 50·5	24 56·2	+0 11·6
September	1.	37 24·7	33 29·4	29 41·4	21 15·6	15 26·4	10 9·0	24 34·4	+0 59·7	25 34·1	+0 26·3
	2.	36 40·2	33 55·8	27 54·0	21 48·6	14 17·4	11 55·2	24 25·2	+1 08·9	25 34·1	+0 26·3
	3.	38 03·0	33 33·6	28 43·2	21 40·8	14 50·4	9 44·4	24 25·9	+1 18·1	25 44·0	+0 36·2
October ...	1.	39 42·2	33 13·8	28 20·4	20 25·8	16 30·6	8 22·2	24 25·8	+1 27·3	25 53·1	+0 45·3
	2.	37 25·2	34 58·2	27 11·4	21 33·6	14 3·0	8 37·2	23 58·1	+1 36·4	25 34·5	+0 26·7
	3.	37 58·6	31 44·4	27 8·4	21 1·8	14 19·2	8 4·2	23 22·8	+1 45·6	25 08·4	+0 00·6
November	1.	38 11·0	31 15·6	27 20·4	21 13·8	14 13·8	8 54·0	23 31·4	+1 54·8	25 26·2	+0 18·4
	2.	37 05·0	32 54·6	28 13·2	21 34·8	13 45·6	8 54·6	23 44·6	+2 04·0	25 48·6	+0 40·8
	3.	34 47·2	31 42·6	29 1·2	20 45·6	13 12·0	7 33·6	22 50·4	+2 13·1	25 03·5	−0 04·3
December	1.	35 17·2	32 49·8	27 39·0	21 42·0	13 13·2	7 58·2	23 6·6	+2 22·3	25 28·9	+0 21·1
	2.	35 16·1	33 12·6	27 41·4	21 7·2	13 18·0	8 30·0	23 10·9	+2 31·5	25 42·4	+0 34·6
	3.	35 41·4	32 25·4	26 55·2	20 31·8	13 33·0	7 53·4	22 50·0	+2 40·7	25 30·7	+0 22·9
Means.	.....	38 06·4	33 59·4	29 1·2	22 57·0	16 8·4	10 34·2	25 07·8			
Annual differences.			4′ 7″·0	4′ 58″·2	6′04″·2	6′ 48″·6	5′ 34″·2	5′ 30″·4			